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Surgeons' Views on Shared Decision-Making

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Purpose	Shared decision-making (SDM) has a significant role in surgical encounters, where decisions are influenced by both clinician and patient preferences. Herein, we sought to explore surgeons' practices and beliefs about SDM.
Methods	We performed a qualitative study consisting of semi-structured individual interviews with 18 surgeons from private practice and academic surgery practices in Baltimore, Maryland. We purposively sampled participants to maximize diversity of practice type (academic vs private), surgical specialty, gender, and experience level. Interview topics included benefits and challenges to patient involvement in decision-making, communicating uncertainty to patients, and use of decision aids. Interviews were audio-recorded and transcribed. Transcripts were analyzed using content analysis to identify themes.
Results	Surgeons were supportive of patients being involved in decision-making, particularly in cases with uncertainty about treatment options. However, surgeons identified SDM as being more appropriate for patients whom surgeons perceived as interested in decision-making involvement and for decisions in which surgeons did not have strong preferences. Additionally, surgeons reported typically presenting only a subset of available options, remaining confident in their ability to filter less suitable options based on intuitive risk assessments. Surgeons differed in their approach to making recommendations, with some guiding patients towards what they saw as the correct or optimal decision while others sought to maintain neutrality and support of the patients' chosen decision.
Conclusions	Many surgeons do not believe SDM is universally optimal for every surgical decision. They instead use assessments of patient disposition or potential clinical uncertainty to guide their perceived appropriateness of using SDM. (<i>J Patient Cent Res Rev.</i> 2020;7:8-18.)
Keywords	shared decision-making; surgical decision-making; patient-centered care; surgery; perception

Shared decision-making (SDM) is being increasingly viewed as an optimal approach for achieving patient-centered care and a cornerstone of health care policy in the United States.¹⁻³ In SDM, patients, their families, and clinicians engage in a

partnered dialogue in which the values and preferences of the patient and physician are fully explored, risks and benefits of treatment options are presented using the best available evidence, and a mutual decision is made to advance the unique health goals of the patient.^{4,5} Thus, SDM allows patients to be active and engaged drivers of their own health plans.

SDM has significant application to surgical practice, where the decision to pursue surgery as well as the desired procedure is often preference-sensitive.⁶⁻⁸ In addition to the ethical imperative of respecting

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patient autonomy in decision-making,^{9,10} SDM has been shown to improve decision quality, utilization of care, patient certainty, and patient satisfaction in surgical decision-making.⁸

However, clinical application of SDM and assessment of its impact on health outcomes has been limited.^{1,11,12} One barrier to implementation is clinicians' perception that SDM cannot be easily applied in their established practices. For example, many clinicians cite lack of time to engage patients in a potentially lengthy discussion of values and preferences for all available options, although many current studies indicate that use of SDM has, at most, limited impact on clinic visit times.¹¹ Additionally, even for clinicians who broadly express support for SDM, many also hold fundamentally inconsistent beliefs about engaging in key SDM behaviors.¹³ This hesitancy may, in turn, reflect both the lack of formal SDM training for practitioners and their potentially unclear understanding of the significance of SDM.¹² Finally, clinicians may believe that SDM applies only to certain clinical scenarios involving specific patients, though clinicians routinely underestimate how involved patients want to be in their care.^{14,15} Moreover, while SDM is most applicable to cases for which there is more than one medically reasonable option, clinicians may underestimate the extent to which patient values may influence decisions. These barriers to integration of SDM in clinical practice may be particularly relevant in surgery, where both training and established surgeons typically express lowest levels of support for SDM.¹⁶

To better understand barriers and facilitators of SDM in surgery, a necessary first step is understanding how surgeons currently define and perceive SDM. In this study, we explored surgeons' attitudes and beliefs about SDM through semi-structured interviews with surgeons from a range of practice types and specialties.

METHODS

Study Design

We applied a qualitative approach to thoroughly explore the complexity of attitudes and practices regarding SDM in surgery, generating hypotheses that can be later tested more broadly and quantitatively. This study was approved by the institutional review board at Johns Hopkins University (Baltimore, MD).

Setting and Participants

Surgeons from clinical practices in Baltimore were selected, in tandem with another study investigating surgical preoperative evaluations.¹⁷ We aimed for diversity of the study population in surgical experience, subspecialties, gender of physician, and types of practice (Table 1). Both academic and nonacademic surgeons were recruited from various surgical specialties, including general (colorectal, vascular, oncologic, thoracic, endocrine, breast, plastic, and others) and specialty (orthopedic, urologic, otolaryngologic, and others). We also oversampled women and sought a mix of early-, mid-, and late-career surgeons. A total of 18 surgeons were recruited for this study.

We contacted surgeons from two local academic institutions via publicly available email addresses. We obtained contact information for local private-practice

Table 1. Surgeon (N=18) Characteristics

Characteristic	n	%
Gender		
Female	6	33.3%
Male	12	66.7%
Mean age, years (range)	43.4 (32–66)	
Mean time since completed training, years (range)	9.7 (1–36)	
0–5 years	10	55.6%
6–10 years	2	11.1%
11–20 years	3	16.7%
>20 years	3	16.7%
Practice setting		
Academic	9	50.0%
Private practice	9	50.0%
General surgery type		
Colorectal	4	22.2%
Vascular	2	11.1%
Oncologic	1	5.5%
Thoracic	1	5.5%
Endocrine	1	5.5%
Breast	1	5.5%
Plastic	1	5.5%
Nongeneral surgery type		
Orthopedic	5	27.8%
Urologic	1	5.5%
Otolaryngologic	1	5.5%

surgeons with the assistance of the Johns Hopkins Clinical Research Network, a research consortium of area hospitals and health systems. Surgeons were offered a small monetary incentive (\$100 gift card) for participating, and they were interviewed in-person in a private setting that was convenient for them, typically their offices.

Interview Guide

The interview guide was designed to explore how surgeons communicated and pursued decision-making with patients in clinical situations posing uncertainty. To frame the conversation, we prompted surgeons to discuss a specific clinical scenario from their practice that posed uncertainty in decision-making. Surgeons were asked questions such as: “What are the potential benefits and challenges to increased patient involvement in decision-making? How do you present options to patients in cases with uncertainty? How do you respond when patients express a preference that differs from what you believe to be the best option? Do you use resources to help patients choose between different surgical options?”

All members of the study team were involved with developing the interview guide. Throughout the study, we revised the interview guide to allow for further exploration of newly emerging themes. Additionally, semi-structured interviews allowed for topics not included in the initial interview guide to be explored.

The final interview guide is shown in Appendix A (p. 18). We formulated this guide independently of the questions asked in the sister study regarding preoperative evaluations.

Data Collection and Analysis

One investigator conducted the interviews in person between June 2015 and May 2016. Prior to the interview, we collected participant characteristics via questionnaire. Interviews were audio-recorded and the recordings transcribed verbatim. Identifying information was removed from interview transcripts.

Transcripts were initially analyzed using conventional thematic content analysis.¹⁸ Two team members collaboratively developed a codebook of descriptive codes as the transcripts were reviewed. We coded the transcripts using textual data analysis software

(ATLAS.ti Version 7, ATLAS.ti Scientific Software Development GmbH, Berlin, Germany), which facilitated analysis of coded segments to identify emerging themes. The goal of our analysis was not to develop theory but rather to identify themes regarding surgeon attitudes to SDM. The initial stage of coding was done concurrently with conducting of interviews, and recruitment ceased once we reached thematic saturation. While interviewing was done in tandem with the sister study, we performed coding independently to ensure thematic saturation independently for both studies.

After this initial stage, three team members developed an updated codebook of descriptive codes and re-coded each interview. At least two members independently coded each transcript to enhance reliability, and discrepancies were resolved by consensus. Through our coding process, we identified themes and subthemes, summarized in Table 2, across interviews. These themes are presented in Results, together with representative quotes.

RESULTS

Surgeons Generally Support SDM

Most participating surgeons expressed support for patient involvement in surgical decision-making. The primary stated reason for this support was typically patient empowerment.

“I think the pros [for involving patients in decision-making] are that ultimately they have the best handle on discerning their values so they can make the decision. ... And it’s good to empower patients.”
[specialty, female, 0–5 years in practice]

Similarly, surgeons highlighted patient involvement as enabling patients to be more informed about their care. Several surgeons also stated that patients were more likely to be satisfied with and confident in their care if they were involved in decision-making.

“The pros are ... if you go through the process of shared decision-making, people have realistic expectations and they tend to be more content afterwards with the decision they made and there is less regret.” [specialty, male, >20 years in practice]

From another perspective, some surgeons also noted that SDM served to give surgeons “back-up” from patients in cases of unwanted outcomes. As described by one surgeon:

Table 2. Themes and Subthemes Identified

Themes	Subthemes
Surgeons generally support patient involvement in decision-making.	SDM enables patient empowerment. SDM improves patient education. SDM increases patient satisfaction in decision-making.
Surgeons believe SDM is only for patients they perceive as having disposition suitable for decision-making.	SDM can overwhelm or confuse patients. Surgeons believe some patients may prefer surgeons to make decisions on their behalf.
Surgeons believe SDM is only for clinical scenarios where the surgeon does not have a clear, preferred option.	Surgeons intuitively filter less suitable options from consideration. Unsuitable options are not presented or only mentioned for the sake of building trust.
Some surgeons guide patients toward what they see as the right decision.	Patients want surgeons to provide opinions. Surgeons guide patients away from pursuing options conflicting with surgeon preference. Surgeons should disclose biases.
Many surgeons use some form of educational resource with patients.	Few surgeons used decision aids or risk calculators. Surgeons believe decision aids do not change decisions but improve patient confidence in decisions already made.

SDM, shared decision-making.

“And then, not that everything is legal, but on the other side of it — say something happens, you can say, well listen, I explained everything to you, I told you these were the risks, these were the benefits. Together, we decided that you wanted to undergo these risks, and we went that direction.” [specialty, male, 0–5 years in practice]

Surgeons frequently identified a broad culture shift in their practices toward employing SDM, including training in SDM.

“It’s back to this whole idea of the patient now being the decision-maker and it’s a shared decision-making process, and it was really spearheaded, I think, in medical school, but that’s what we’re being taught to do now effectively.” [specialty, female, 0–5 years in practice]

Nevertheless, several surgeons also voiced concerns that patient involvement in decision-making could lead to bad decision-making by the patient.

“I think the downside of [SDM] is that the idea that you can actually really make an informed decision about, you know, a surgical technique never having done it, never having seen it, never knowing anything about [it] until I tell you that you have this diagnosis

... sometimes people make decisions based on kind of something they perceive to make sense about the condition, and they’re just sort of hooked up on some little facet of it that is just making sense to them because of some preconceived notion that’s perhaps totally irrelevant. They can probably make some poor decisions.” [specialty, male, 0–5 years in practice]

Surgeons Believe Appropriateness of SDM Depends on Patient Disposition

The most commonly cited downside to involving patients in decision-making was the potential for overwhelming or confusing patients. For example:

“The con is that it definitely can create anxiety in people because ... they haven’t studied this for the last 20 years. They don’t have enough knowledge base to make the informed decision until you give them the information. So I think it’s anxiety-provoking for people.” [general, male, 0–5 years in practice]

Surgeons had variable preferences about how to approach decision-making with overwhelmed patients. For example, one surgeon preferred a paternalistic role for these patients:

“There can be patients that are just so overwhelmed, and they don’t know what to do and they want you to

just tell them what to do. And I usually do, I mean, I say I would recommend this. I don't usually just say, oh it's completely up to you. I usually give them reasons for why I recommend it, but some patients get, like, really overwhelmed with the options." [general, female, 0–5 years in practice]

Others felt more confident in their ability to modify their conversation to account for patient anxiety and inability to make a decision.

"... I've been around long enough to realize how much in-depth I can get with someone and if somebody looks particularly anxious, or some people could be paralyzed by the fact that they are to make a decision, so in that case I may try to keep it simple." [general, male, >20 years in practice]

Most surgeons perceived that at least some portion of their patient population preferred or required a more paternalistic approach.

"I think all patients are different, and I think some of them come to a surgeon wanting them to tell them what to do, so I am not sure [SDM] is the right thing for all patients, but there are certainly some patients that would feel better ... having the choice. But I am not sure that is all patients." [general, female, 6–10 years in practice]

Another surgeon noted that patients may want to be informed but leave decision-making to the clinician.

"Most of the patients like hearing options, but they want a recommendation. They will say, I came to you because you are the expert, what should I do?" [general, male, 0–5 years in practice]

When contrasting patients who wanted to be involved in decision-making with patients seeking a more paternalistic approach, many surgeons mentioned patients asking what they would choose if in their clinical situation.

"Some patients will just listen to that and then make their decisions. Others would say what would you do? A similar line some would say: If it was your father, what would you do?" [general, male, >20 years in practice]

Thus, surgeons may use these types of questions from patients as cues to the degree of involvement they feel their patients want in decision-making.

Surgeons Believe Appropriateness of SDM Depends on Clinical Scenario

When prompted, almost all participating surgeons identified options that they felt with certainty were unsuitable for the patient, based on their intuitive assessment of the clinical situation. Some surgeons expressed that, for these situations, they would not even present the option to patients. In the context of disk herniations, one orthopedic surgeon stated:

"If they had C3 to C7 central compression all the way down, they get it from the back. If they have a one-level disk herniation that is C5/C6, they pretty much get it from the front. ... I wouldn't even bring up the other option because in my mind I think those ones are better for the patient and that is why." [specialty, male, 0–5 years in practice]

Similarly, in the context of hemorrhoid surgery:

Surgeon: *"Well, if I think that the disease is of such a magnitude that they need a major surgery, I present the [excisional] option first, which is pretty much what I prefer and that I know to do better than the others do."*

Interviewer: *"So in those cases, they might never hear about stapling or ligating — you've told them that the excisional will take care of it and they agree and you sort of plan to move forward?"*

Surgeon: *"Correct."* [general, male, >20 years in practice]

On the other hand, other surgeons stated that they would discuss these unsuitable options with these patients, because:

"... they need to know the anatomy of what's involved and the different ways of approaching their pathology." [specialty, male, 0–5 years in practice]

Another cited reason for discussing unsuitable options was to build trust with patients. For example, while discussing potential approaches for acoustic neuromas, one surgeon stated:

"Yeah, so sometimes if somebody has hearing [nerve tumor], one of the surgical approaches, the trans-labyrinth approach, is really considered not an option. But again, I just tell the patient about it so that they have sense that they're arriving at the decision themselves." [specialty, female, 0–5 years in practice]

Surgeons Vary in SDM Practices for Clinical Scenarios With Uncertainty

Surgeons also were prompted to discuss clinical scenarios in which there was uncertainty in terms of decision-making. In many cases, surgeons focused on scenarios in which uncertainty arose from patient preference-sensitivity to risks and benefits from various options. For example:

“Some people are vehemently opposed to surgery, or vehemently opposed to radiation, or don’t want any kind of treatment at all and want to observe, or need to get the tumor out at all costs, regardless of the size, even if it’s a really small one. So, I think that’s definitely a place to start because they often — given that it’s not clear if any choice is superior, I think patient preference is a reasonable place to start.” [specialty, female, 0–5 years in practice]

Despite recognizing the patient sensitivity of many decisions, often surgeons themselves expressed a clear preference for one decision over another. In some cases, they would guide patients to this preferred decision by favorably or specifically presenting certain options.

Surgeon: *“Usually there’s one option that is more kind of the board answer. But sometimes we do the non-board answer [if the patient accepts] the deficiencies of that procedure, because that’s what the [patient] would prefer to do.”*

Interviewer: *“Do you normally present both options to them even if one may be a little bit less than the board answer?”*

Surgeon: *“Not always. If they come in and say I want a tummy tuck, and they’re a good tummy tuck candidate, they picked the right procedure and we don’t even talk about liposuction.”* [general, female, 11–20 years in practice]

Several surgeons stated that they would always provide a recommendation in each case, believing this to be an important part of their physician role.

“I mean, usually you have an opinion. If I’m 50/50 on something, I am going to tell [the patient] that I’m 50/50 on it, and then I am going to try to relate it to their personality. And I am going to put it in terms of things that they can relate to so they can make an informed decision. But if I have an opinion, I am going to give them my opinion because, truthfully,

I think that is why they are there to see me, is to get my opinion.” [general, male, 0–5 years in practice]

Some surgeons with clear preferences also sought to persuade patients with conflicting preferences to change their minds.

“When I see borderline resectable tumors and I recommend neoadjuvant chemo and then surgery, a lot of times the people are like, no, cut it out. I respond with, I can understand why you think that way, but let me explain to you why I think we should go this other route.” [general, male, 0–5 years in practice]

In other cases, surgeons only disclosed their preferences when prompted by patients. For example, when asked whether he made final recommendations to patients based on his personal preference, one surgeon replied as follows:

Surgeon: *“Some patients will just listen to [the options] and then make their decisions. Others would say, what would you do? ... If they have put me on the line, then I usually, in this situation, I usually recommend toward surgery because my explanation to them is ... you will probably benefit more by surgery than aspirin.”*

Interviewer: *“It sounds like unless they push you, unless they ask you, you might withhold your recommendation to see what they want to do?”*

Surgeon: *“Fully, yeah, which way to go.”* [general, male, >20 years in practice]

Others disclosed their biases to patients but sought to make it clear that patients could pursue an alternative approach if desired. In the context of deciding between surgery and radiation, one surgeon stated:

“I mean, that’s certainly what I learned in training, that when people are undecided, I’ll disclose my bias, which is I’m a surgeon, so I obviously have a lot of expertise and interest in surgical approaches, but I want you to be completely comfortable with the choice that you make, so I encourage you to visit this person, who is a radiation oncologist who will discuss all the risks with you, and I think patients for the most part appreciate that.” [specialty, female, 0–5 years in practice]

This same surgeon further expanded:

Interviewer: *“In these cases, even though you’re presenting multiple options and you’re saying that there is some uncertainty, do you usually have a feeling that there is a single best option for that patient?”*

Surgeon: *“Not necessarily, because I think every patient values different complications — potential complications and side effects — differently. And I don’t necessarily know that from meeting them, so I try to be very clear about what are some of the major potential risks associated with each of the approaches, and so I think it’s pretty idiosyncratic what people would select for themselves in terms of the risks they would choose to incur.”*

Surgeons Share Educational Materials, but Experience With Decision Aids Is Limited

The majority of participating surgeons used some mode of education resource with their patients, including websites (both academic and nonacademic), pamphlets, books, diagrams, and others. For some surgeons, these were made a focus of clinic visits.

“I actually have on my laptop in the clinic, I have resources. For example, there is a life-expectancy calculator so that I can help people understand.”
[specialty, male, >20 years in practice]

Others simply provided the resources to patients and encouraged them to ask any questions as they arose.

Only a small subset of surgeons used formal decision aids with their patients during decision-making. Those who used decision aids often stated that they did not feel that these tools helped patients make decisions but rather improved their confidence in decisions for which they already had preference.

“I think that [decision aids] make people feel more comfortable with their decision. I don’t think it necessarily changes that many decisions.”
[specialty, male, 0–5 years in practice]

Almost all surgeons acknowledged that patients were increasingly seeking their own information for decision-making, whether from other patients, family, or the internet. Surgeons expressed mixed feelings about the internet as a resource.

“It’s a fine line because my patients that go online and do a lot of research and read things online, they also freak themselves out ... so truthfully I actually encourage patients not to go online and to research things. That if they have questions, they should email me or call me, and I will explain it to them.”
[general, male, 0–5 years in practice]

DISCUSSION

We found that surgeons were broadly supportive of patient engagement through SDM and believed that SDM improved patient education and empowerment. Nevertheless, surgeons believed that SDM was only appropriate for a subset of patients and treatment decisions, based on intuitive assessments. It is conceivable that SDM is not always superior to other modes of clinician-patient communication. Moreover, though research suggests that SDM improves decision quality, the impact on patient surgical health outcomes remains unknown.⁸ Still, we believe that SDM should be normative throughout surgical encounters and scenarios, particularly given the preference-sensitive nature of many decisions in surgery.⁷ Our study captures potential impediments to full implementation of SDM in surgical care and highlights potential targets for interventions to improve surgeon-patient partnership in decision-making.

Surgeons’ most frequently mentioned concern regarding SDM was the possibility of overwhelming or confusing patients. Surgeons, therefore, used their perceptions of the patient during clinical encounters to determine the patients’ putative desire to be involved in decision-making, confident in their ability to assess how appropriate SDM was to a given patient.

However, physicians routinely misinterpret the degree of involvement that patients wish to have in their care.^{14,15} Even patients who may prefer to defer final decision-making to their physician prefer to be significantly involved in deliberation and planning of treatment.^{19,20} When physicians take on a paternalistic role, patients may be further discouraged to engage in collaborative decision-making due to fear of being seen as a “difficult” patient or receiving poor care.^{21,22} Also, physicians may harbor some implicit bias and curtail implementation of SDM and presentation of alternatives based on preconceptions about

engagement and decision-making preferences for certain racial/ethnic groups.²³

Often, patient desire to participate in decision-making is not fixed but rather evolves through the building of trust and partnership through a strong patient-physician relationship. While emotionally challenging experiences, health care decisions can serve as opportunities for physicians to engage patients emotionally and acknowledge their concerns and preferences rather than assuming that these patients may not wish to be involved in decision-making.^{20,24}

The need for SDM extends to the selection of the most appropriate care decision for the patient. In our study, surgeons stated that uncertainty in their practice largely rose from patient preference-sensitivity in clinical situations with multiple valid decisions with different trade-offs. Nevertheless, they felt comfortable filtering options from consideration based on intuitive risk assessments. Other surgeons expressed preferred decisions for specific clinical scenarios, with some even pushing patients toward what they saw as the optimal choice. This “implicit persuasion” is a significant barrier to application of SDM, especially given the likelihood of physician “misdiagnosis” of patient preference.^{25,26} Moreover, because patients may process risk and benefits differently than their physicians, it is possible that options viewed as less optimal or even unsuitable by surgeons may actually be acceptable or preferable to patients.^{27,28} Several studies have shown that physician recommendations can influence patients to make decisions at odds with their own preferences and values.^{29,30} Thus, while it may appear sensible for surgeons to filter unsuitable options from consideration or emphasize a preferred “optimal” choice, there is a danger that they may incorrectly estimate the degree to which any given choice aligns with the patients’ values.

We do not claim that providing recommendations is inherently paternalistic or at odds with SDM — indeed, SDM is inherently an interdependent process that marries the expertise of both patient and physician in making decisions.³¹ However, we do emphasize that in SDM, physicians must make recommendations in the context of patient values while recognizing the potential impact of their recommendation in influencing their patients.

One possible intervention to improve SDM in surgical care would be to improve surgeon understanding of SDM as a deliberative, dialogue-oriented process. In this study, we prompted surgeons to describe their understanding and implementation of SDM in a clinical situation with uncertainty of evidence. Interestingly, many surgeons described their process as very similar to the classic “informative model” of patient-physician interaction, in which the surgeon serves as a source of medical information rather than a collaborator or partner in decision-making.³² Underlying this informative model is the assumption that physicians are simply technical experts whose engagement with patient values is minimal, with patients the final decision-makers. Correspondingly, many surgeons exhibited concern that patients, with their lack of clinical knowledge, would simply never be educated enough to make informed care decisions. However, a truly deliberative approach, as encompassed by SDM, requires patient and clinician to partner together to discuss options in light of patient (and physician) values, which may be unknown, evolving, or even contradictory.³³ An effective model of SDM requires surgeons and patients to work in tandem, through dialogue, to help unpack and elucidate patient values with regards to clinical decision-making.

Thus, successful interventions should implement training for surgeons to recognize situations requiring patient partnership and engagement. For example, surgeons frequently discussed occurrences when patients asked the clinician, “What would you do if you were in my shoes?” In many cases, surgeons indicated these as scenarios in which they saw the patient as relinquishing decision-making responsibility. However, patients are often looking for engagement with and emotional support from their physicians.³⁴⁻³⁷ SDM represents a potential approach to answering emotionally laden questions from patients, allowing patient and physician to collaboratively explore clinical options in light of values important to both patient and physician and come to a mutually agreeable decision. We again note that providing an answer or recommendation to the question “What would you do if you were me?” is not necessarily at odds with patient-centered care; indeed, to remain “neutral” may be as paternalistic as forcing an option on the patient.³⁵

In addition to exploring surgeons' attitudes towards SDM, we also investigated how surgeons use educational tools with their patients. Interestingly, we found that while most surgeons used some form of educational material, very few used formal decision aids in their practice. Moreover, those who did found that they did not influence patient decisions but rather improved satisfaction with already-made decisions. These findings correspond well with previous studies that have suggested that decision aids have equivocal impact on choice of procedure but reduce decision conflict.^{8,38} However, our study did not take into account how surgeons who use decision aids incorporate them into their practice, which may affect how patients respond to their use. Investigating surgeon use of decision aids will be an important topic for future study and a potential intervention to facilitate SDM in surgical practice.

Limitations

We performed a qualitative study to allow for emergence and exploration of themes related to how surgeons' perceived SDM. Our findings may be particularly relevant given both the preference sensitivity of many surgical decisions as well as the low support for SDM among surgeons.^{16,39} However, our study design must be further validated through quantitative methods on larger samples. In particular, while our sample was diverse across practitioner gender, experience, practice type, subspecialty, the study size was too small for further analysis of different attitudes based on practitioner characteristics. Moreover, since all of the interviewed practitioners were from one geographic region, and practice patterns may vary geographically, perhaps different themes would emerge if we interviewed surgeons who practice elsewhere.

CONCLUSIONS

The aim of this study was to survey a diverse group of surgeons, given our geographic region, and identify common emerging themes; further research is necessary to validate the generalizability of our findings. Nevertheless, by focusing on common themes, we believe this study provides useful first steps into understanding how surgeons view SDM with regards to their own practices. These results suggest approaches by which SDM can be further implemented into surgical care.

Patient-Friendly Recap

- Shared decision-making — a process in which patient and clinician explore each other's values and preferences to best achieve the health goals of the patient — has been shown to improve decision quality and patient satisfaction.
- While surgeons broadly support patient involvement in deciding course of care, they do not believe that shared decision-making is optimal for all patients and surgical decisions.
- Surgeons often rely on their intuitive assessments of patient disposition and the clinical situation to determine their usage of a shared decision-making approach.
- Interventions to improve shared decision-making for surgeries should include surgeon training to recognize opportunities for patient partnership and engagement.

Author Contributions

Study design: Riggs, Berger. Data acquisition or analysis: Kannan, Seo, Riggs, Berger. Manuscript drafting: Kannan, Seo, Berger. Critical revision: all authors.

Conflicts of Interest

Apart from funding sources noted below, the authors have no conflicts to disclose.

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Appendix A: Interview Guide

Now I would like to ask you some questions about your experiences with helping patients consider surgical options.

I am interested in your experience of talking to patients in cases where the right decision is uncertain. For example, in internal medicine, we help patients consider statins for primary prevention. In that case, the guidelines are always changing, and sometimes the patients don't really match the patients from the trials. And the benefit is a decreased risk of a bad outcome, so there are probabilities involved. So can you think of an operation you frequently perform or a specific case where there are multiple options and the best choice is uncertain from the available evidence?

[PROMPT: I'm looking for a case where there might be different options, for example, open versus laparoscopic repair of an aneurysm.]

1. Tell me about an example like this in your practice.
2. Will you walk me through how you would present the available options to the patient?
3. How do patients react to being given options?
4. How do patients react to being told that there is uncertainty?
5. In this case, even though you are presenting multiple options, do you have an opinion about which option is best?
6. In the case of [case they told me about], when you give patients options, do they ever express a preference that differs from what you believe to be the best option?
 - a. How?
 - b. How do you respond?
7. Are there ever situations in [case they told me about] where you would not present both options?
 - a. If so, why?
8. How often do you find that you face situations like this, where there is uncertainty about options?
9. What are the pros and cons of involving the patient in choosing between different surgical options in this case?
10. Do you use any resources to help patients choose between different surgical options in this case?
11. Would you mind being contacted in the future if we had more questions, or to see if you agree with the conclusions we reach from all of these interviews?